



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/581,454

06/01/2006

Masaki Nakano

047083-0112

2192

22428 7590 10/25/2010  
FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

IRVIN, THOMAS W

ART UNIT

PAPER NUMBER

3657

MAIL DATE

DELIVERY MODE

10/25/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,454	<b>Applicant(s)</b> NAKANO, MASAKI	
	<b>Examiner</b> THOMAS IRVIN	<b>Art Unit</b> 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9, 10 and 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20100408</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidston et al. (5,615,933) in view of Yamamoto et al. (6,607,253).

In Re claims 1 and 3, Kidston et al. disclose a brake device comprising: a hydraulic brake (36,38); a wheel cylinder pressure passage (40,42); an on-demand brake pressure passage (see master cylinder 78, and passages 86 and 87); and a wheel-cylinder pressure modulator valve (see solenoid valves 102 and 104, and actuators 114 and 116). Kidston fails to teach the use of a brake reaction torque detector.

Yamamoto et al. teach including strain sensors (312,314) in a brake system to use the actual braking torque detected by the strain sensors to control the applied braking to become equal to a target braking torque. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the brake system of Kidston et al. to include a brake torque detector device, as taught by Yamamoto et al., to measure and thus balance the hydraulic and regenerative braking torques applied.

In Re claim 2, see motor (18) and sensors (28,30).

In Re claims 4, 18, and 20, the wheels and brake disks (32,34) are swingably mounted to the vehicle, in that they rotate relative to the vehicle and calipers (36,38). The brakes are understood to have a swing movement when the fluid pressure is reduced, thus allowing the wheels and brake disks to rotate.

Claims 5-7, 11, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidstom et al. (5,615,933) and Yamamoto et al. (6,607,253) as applied to claim 1-4 and 18 above, and further in view of Laurent et al. (6,113,119).

In Re claims 5, 6, and 19, Kidstom et al., as modified, fail to teach the location of the motor drive unit (18).

Laurent et al. teach integrating a cylindrical drive motor (97) into a wheel and brake assembly of an electric vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have integrated the drive and brake device of Kidstom et al. into a wheel assembly, as taught by Laurent et al., to reduce packaging and manufacture a complete wheel connecting system which is easy to integrate into a vehicle.

In Re claims 7 and 11, see motor (97) of Laurent et al.; and additionally see master cylinder (78), brake operating means, pedal (70), wheel-cylinder pressure chambers (adjacent 36,38), return fluid pressure chamber (80), on-demand brake fluid pressure chamber (master cylinder 78), first communicating fluid pressure passage (adjacent 98,100); and modulator valves (102,104) in a second fluid passage (94) of

Art Unit: 3657

Kidstom et al.. Additionally, the ABS system including the calipers, wheel speed sensors, and brake reaction torque detectors, are understood to meet applicants limitations including a mechanical feedback mechanism and working arm, in that the brakes mechanically impart a braking torque on the brake disk and the detectors and sensors causes the solenoid valves to mechanically open/close, thus reducing the braking effort which can be balanced with the on-demand brake torque generated by the on-demand brake pressure passage. Applicant is again suggested to reword the mechanical feedback to specifically point out the mechanical working relationship and relative movement between the claimed brake device elements.

### ***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 3657

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS IRVIN whose telephone number is (571)270-3095. The examiner can normally be reached on M-F 10-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Irvin/  
Examiner, Art Unit 3657

/Bradley T King/  
Primary Examiner, Art Unit 3657